Table II - Side-by-Side Comparison of Options for Ecological Sustainability

2000 Rule	2002 Proposed Rule- 219.13(b) Option 1	2002 Proposed Rule- 219.13(b) Option 2
§219.19 Ecological, social, and economic sustainability. Sustainability, composed of interdependent ecological, social and economic elements, embodies the Multiple Use Sustained-Yield Act of 1960 (16 U.S.C. 528 et seq.).	**§219.13 Sustainability.** Same as 2000 rule	**§219.13 Sustainability.** Same as 2000 rule
The first priority for stewardship of the national forests and grasslands is to maintain or restore ecological sustainability to provide a sustainable flow of uses, values, products, and services from these lands.	Does not recognize ecological sustainability as a stand-alone entity. Recognizes sustainability as having three interdependent components: social, economic, and ecological.	Same as 2002 Option 1
§219.20 Ecological sustainability. Ensure that plans provide for maintenance or restoration of ecosystems at appropriate spatial and temporal scales to be determined by the Responsible Official.	**§219.13 (b) Ecological component of sustainability.** The ecological component of sustainability includes, but is not limited to, the following elements: the productivity, health, and function of ecosystems; the diversity of plant and animal communities and tree species; and the quality of soil, water, and air resources. As part of planning, the Responsible Official must follow a hierarchical, sequential approach to consider and assess ecosystem and species diversity. Provides flexibility for Responsible Official to determine appropriate methods.	**§219.13 (b) Ecological component of sustainability.** The ecological component of sustainability includes, but is not limited to, the following elements: the productivity, health, and function of ecosystems; biological diversity at ecosystem and species levels; and the quality of soil, water, and air resources. As part of the planning process, the Responsible Official must ensure that a hierarchical approach is followed to consider and assess biological diversity at two levels of ecological organization, ecosystem and species. Assessments of biological diversity at ecosystem and species levels should address effects of natural and human disturbances and of the ecological condition, structure, and land use history of the planning or assessment area.
§219.20(a) Ecological information and analyses. Ecosystem diversity and species diversity are components of ecological sustainability.	**§219.13(b)(1) Ecological information and analyses.** Analyses of ecosystem and species diversity should be proportional to the issues identified by the Responsible Official, risks to ecological sustainability, and availability of information relevant to the plan area. Information and analyses may be identified, obtained, or developed through a variety of methods, including assessments, analyses, and monitoring.	**§219.13(b)(1) Ecological information and analyses.** Analyses of biological diversity at ecosystem and species levels should be proportional to the issues identified by the Responsible Official, risks to ecological sustainability, and availability of information relevant to the planning or assessment area. Information and analyses may be identified, obtained, or developed through a variety of methods, including assessments, analyses, and monitoring, and where appropriate should extend to the larger landscape in which the plan area is embedded. Ecological information and analyses must be based upon an assessment of two main components, ecosystem diversity and species diversity, and additional analyses

2000 Rule	2002 Proposed Rule- 219.13(b) Option 1	2002 Proposed Rule- 219.13(b) Option 2
		considering three factors, spatial and temporal scales and patterns, disturbance regimes, and landscape context.
The planning process must include the development and analysis of information regarding these components at a variety of spatial and temporal scales.	Consideration and evaluation of ecosystem and species diversity includes development and analysis of information over relevant timeframes and geographic areas as determined by the Responsible Official.	Biological diversity should be considered and evaluated over appropriate timeframes and geographic areas as determined by the Responsible Official.
(1) Characteristics of ecosystem and species diversity. Characteristics of ecosystem and species diversity must be identified for assessing and monitoring ecological sustainability.	**(1)(i) Consideration and evaluation of ecosystem diversity.** Ecosystem diversity should be considered and evaluated first, leading to development of plan direction that provides for the needs of most species of plants and animals. Characteristics and evaluation of ecosystem diversity should be identified and completed at the scope and scale determined to be appropriate by the Responsible Official. Evaluations should describe the contribution of NFS lands to ecosystem diversity within the area of analysis.	**(1)(i) Consideration and evaluation of ecosystem diversity.** Consideration and evaluation of ecosystem diversity constitutes the core approach and is the primary focus of ecological information and analysis. Characteristics and evaluation of ecosystem diversity should be identified and completed over timeframes and geographic areas determined to be appropriate by the Responsible Official. Analyses should describe and assess the contributions of NFS lands to ecosystem diversity in the planning or assessment area.
(i) Ecosystem diversity. Characteristics of ecosystem diversity include, but are not limited to: **(A)** Major vegetation types **(B)** Water resources **(C)** Soil resources **(D)** Air resources and	**(1)(i)(A) Characteristics of ecosystem diversity.** Characteristics of ecosystems include, but are not limited to, a description of composition, structure, and processes; and soil, air, and water resources within the area of analysis.	**(1)(i)(A) Characteristics of ecosystem diversity.** Characteristics of ecosystems that should be considered within the planning or assessment area include, but are not limited to, ecological structure, composition, and processes; spatial extent, distribution, and relations; geology and landforms; and soil, water, and air resources.
(E) Focal species: focal species that provide insights to the larger ecological systems with which they are associated.	Addresses species-at-risk and native and desired non-native vertebrates and vascular plants.	Species may be selected for analysis to develop more complete understanding of condition and trends of ecosystems.

2000 Rule	2002 Proposed Rule- 219.13(b) Option 1	2002 Proposed Rule- 219.13(b) Option 2
ii) Species diversity. Characteristics of species diversity include, but are not limited to, the number, distribution, and geographic ranges of plant and animal species, including focal species and species-at-risk that serve as surrogate measures of species diversity. Species-at-risk and focal species must be identified for the plan area.	**(1)(ii) Consideration and evaluation of species diversity.** Where the needs of particular species, species assemblages, or other species groupings not likely to be met through plan direction for ecosystem diversity, species diversity should be considered and evaluated. Characteristics and evaluation of species diversity should be identified and completed at the scope and scale determined to be appropriate by the Responsible Official. Evaluations should describe the contribution of NFS lands to species diversity within the area of analysis.	**(1)(ii) Consideration and evaluation of species diversity.** Consideration and evaluation of species diversity is a complementary approach that extends ecosystem analyses to address specific planning issues. Characteristics and evaluation of evaluation of ecosystem diversity should be identified and completed over timeframes and geographic areas determined to be appropriate by the Responsible Official. Analyses should describe and assess the contributions of NFS lands to ecosystem diversity in the planning or assessment area. Analyses of species and species groups should be undertaken to provide a more complete understanding of impacts of past, current, and anticipated management direction on biological diversity, including the status of species and the ecosystems in which they occur. In a hierarchical context, species analyses should be conducted within the framework of, and should incorporate information from, larger-scale ecosystem analyses.
	(1)(ii)(A) Characteristics of species diversity. Similar to 2000 rule, except there is no requirement for identifying focal species. Species, species assemblages, or other species groups may be used to characterize species diversity.	**(1)(ii)(A) Characteristics of species diversity.** Characteristics of species diversity include, but are not limited to, the composition and richness (number of species) of the existing pool of species, and the abundance, distribution, geographic range, and status of individual species chosen for analysis.
(2) Evaluation of ecological sustainability. Evaluations of ecological sustainability must be conducted at the scope and scale determined by the Responsible Official to be appropriate.	Evaluations must be conducted at the scope and scale determined by the Responsible Official to be appropriate to the issues being addressed in the planning process.	Evaluations of ecological sustainability should be tailored to the particular planning or assessment area and the issues identified in the planning process.
(i) Evaluation of ecosystem diversity. **(A) Information about focal species.**	**(1)(i)(B) Evaluation of ecosystem diversity.** No specific requirement for focal species.	**(1)(i)(B) Evaluation of ecosystem diversity.** No specific requirement for focal species, but species may be selected for analysis to develop a more complete understanding of the condition and trends of ecosystems.
(B) A description of the biological and physical properties of the ecosystem.	An evaluation of water and air quality and soil productivity.	Analyses should evaluate the condition and quality of water and air resources, the condition of stream networks and channels and of watersheds, and the quality and productivity of soils.

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(C) A description of the principal ecological processes occurring at the spatial and temporal scales. Descriptions must include disturbance regimes of the current climatic period.	Evaluations of ecosystem diversity should include the status of the characteristics of ecosystem diversity in (1)(i)(A) of this section, and risks to ecosystem health. Includes disturbance regimes but does not reference the climatic period.	Evaluations of ecosystem diversity should identify ecosystems in the planning or assessment area and characterize their ecological structure, composition, processes, and spatial relations.
(D) A description of the effects of human activities on ecosystem diversity.	A description of the historic and current effects of human activities on the characteristics of ecosystem diversity.	Analyses should evaluate the status of the characteristics of ecosystem diversity identified in (1)(i)(A) of this section and risks or threats to these characteristics, including impacts of past, current, and anticipated management direction on ecosystem diversity. Evaluations should identify unique areas, including rare ecosystems, compositional or structural elements, and ecosystems at risk, specific risks or threats to these areas, and measures required for their conservation or restoration.
(E) An estimation of the range of variability of the characteristics of ecosystem diversity.	No requirement to establish range of variability.	No requirement to establish range of variability, but must be able to identify and describe the range of biological diversity characteristic of native ecosystems within the larger landscape in which the plan area is embedded**.**
(F) An evaluation of the effects of air quality on ecological systems including water.	No specific requirement - the need to evaluate effects of air quality on ecological systems driven by identified issues.	Same as 2002 Option 1
(G) An estimation of current and foreseeable future Forest Service consumptive and non-consumptive water uses.	An estimation of current and foreseeable future consumptive and non-consumptive National Forest System water needs, and the quantity and quality of water needed to support those uses.	Analyses should estimate current and foreseeable future consumptive and non-consumptive National Forest System water needs, and the quantity and quality of water needed to support those uses.
(H) An identification of reference landscapes.	No requirement for identifying reference landscapes.	No requirement for identifying reference landscapes.
(ii) Evaluations of species diversity. Evaluations of species diversity must include, as appropriate, assessments of the risks to species viability.	**(1)(ii)(B) Evaluation of species diversity.** Evaluations of species diversity should identify species-at-risk, their habitat requirements, and threats placing them at risk, based on current conditions and trends and management direction.	**(1)(ii)(B) Evaluation of species diversity.** Individual species should be identified for evaluation to address a particular planning issue, to develop a more complete understanding of the condition and trends of ecosystems, or where substantive concerns exist regarding the continued persistence of the particular species within the planning or assessment area. Evaluations of species diversity should be conducted along two complementary tracks with related purposes. Community analyses should determine whether maintenance of ecosystem diversity is sufficient to maintain the existing pool of species within the

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		planning or assessment area.
(A) The viability of each species listed under the Endangered Species Act as threatened, endangered, candidate, and proposed species must be assessed. Individual species assessments must be used for these species.	Evaluations should include assessments of risk to species viability and identification of ecological conditions capable of supporting species viability over time.	Individual species analyses should evaluate impacts of past, current, and anticipated management direction on individual species selected for analysis.
(B) For all other species, including other species-at-risk and those species for which there is little information, a variety of approaches may be used.	The level of detail of the analyses performed should be proportional to the issues identified by the Responsible Official and the associated risk to species viability.	Evaluations should identify species or species groups found within the planning or assessment area, including native and non-native species, and, where feasible, compile information on species status, spatial distribution, geographic range, abundance, and population trends.
(C) Except as provided in paragraph (A), assessments of functional, taxonomic, or habitat groups rather than individual species may be appropriate.	The assessment evaluations may be simplified by the use of groups of species or species that serve as surrogates for evaluating species diversity.	Evaluations should analyze the composition and distribution of communities and species assemblages across the planning or assessment area; examine relations of community or assemblage measures to underlying biophysical conditions, with particular attention to attributes affected by management actions; and analyze impacts of past, current, and anticipated management direction on individual species selected for analysis.
(D) In analyzing viability, species assessments may rely on general conservation principles and expert opinion.	Where little information is available for particular species, assessments may be qualitative.	Evaluations must identify species for which substantive evidence exists that continued persistence in the planning or assessment area is at risk, specific risks or threats to these species, and measures required for their conservation or restoration.
No specific section on this topic. Included in other parts of the required evaluations.	No specific section on this topic. Included in other parts of the required evaluations.	**(1)(iii) Further analyses of biological diversity.** In addition to the information and analyses identified in (b)(1)(i)-(ii) of this section, the following additional information and analyses should be included in the approach to considering and assessing biological diversity. **(1)(iii)(A) Consideration and evaluation of spatial and temporal scales and patterns.** Biological diversity should be evaluated across multiple timeframes and geographic areas.
No specific section on this topic. Included in other parts of the required evaluations.	No specific section on this topic. Included in other parts of the required evaluations.	The Responsible Official should follow a spatially explicit approach to assessments of biological diversity, by considering such factors as abundance, extent, patch size, distribution, and interspersion of ecosystems and species populations over time, and by focusing on specific landscape features as well

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		as their sizes, shapes, and spatial relationships.
No specific section on this topic. Included in other parts of the required evaluations.	No specific section on this topic. Included in other parts of the required evaluations.	Where appropriate, detailed analyses should be conducted over large geographic areas and long time frames. Analyses at these large scales are appropriate for evaluating dynamics of wide-ranging species and cumulative impacts of management actions on biological diversity. Evaluations of biological diversity over large geographic areas should be coordinated across multiple National Forest System administrative units.
No specific section on this topic. Included in other parts of the required evaluations.	No specific section on this topic. Included in other parts of the required evaluations.	**(1)(iii)(B) Consideration and evaluation of disturbance regimes.** The Responsible Official should consider and evaluate impacts of disturbance regimes, natural and human-induced, on biological diversity at ecosystem and species levels over appropriate geographic areas and timeframes. Evaluation of disturbance regimes should help clarify the land manager's opportunities and options for achieving biological diversity objectives.
No specific section on this topic. Included in other parts of the required evaluations.	No specific section on this topic. Included in other parts of the required evaluations.	Analyses should characterize current and recent disturbance regimes in terms of spatial extent and distribution, periodicity, type, and intensity and should evaluate impacts on biological diversity in the planning or assessment area. Evaluations should consider impacts of past, current, and anticipated management direction on disturbance regimes and consequences of altered disturbance regimes for biological diversity in the planning or assessment area.
No specific section on this topic. Included in other parts of the required evaluations.	No specific section on this topic. Included in other parts of the required evaluations.	**(1)(iii)(C) Consideration and evaluation of landscape context.** The Responsible Official should evaluate the landscape context for assessments of biological diversity at ecosystem and species levels. Analyses of landscape context should evaluate and characterize the ecological condition, structure, and land use history of the planning or assessment area, and evaluate effects on biological diversity.
No specific section on this topic. Included in other parts of the required evaluations.	No specific section on this topic. Included in other parts of the required evaluations.	Analyses should consider and evaluate differences in the ecological condition and spatial structure of ecosystems and landscapes between National Forest System lands and adjacent ownerships. Based on these differences, the Responsible Official should identify and evaluate options for and any special role of National Forest System

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		lands to contribute to maintenance or restoration of biological diversity in the planning or assessment area, as well as factors that would limit options and opportunities for managing NFS lands to achieve biological diversity objectives.
(b) Plan decisions. When making plan decisions that will affect ecological sustainability, the Responsible Official must use the information developed under §219.20 (a) The following requirements must apply at the spatial and temporal scales that the Responsible Official determines to be appropriate to the plan decision:	**§219.13 (b)(2) Plan decisions.** The Responsible Official must provide for the diversity of plant and animal communities and tree species within the plan area consistent with the multiple use objectives of the plan while sustaining the productivity of the land. When developing plan decisions, the Responsible Official must consider the information and analyses described in (b)(1) of this section. The following requirements apply over relevant timeframes and geographic areas that the Responsible Official determines to be appropriate:	**§219.13 (b)(2) Plan decisions.** The Responsible Official must provide for biological diversity at ecosystem and species levels within the plan area consistent with the multiple use objectives of the plan while sustaining the productivity of the land. When developing plan decisions, the Responsible Official must consider the limits of agency authorities, and must consider and fully disclose results of the ecological information and analyses described in (b)(1)(i)-(iii) of this section. The following requirements apply over the relevant timeframes and geographic areas that the Responsible Official determines to be appropriate:
No specific section on this topic.	No specific section on this topic.	**(2)(i) Biological diversity.** Plan decisions, to the extent feasible, should foster the maintenance or restoration of biological diversity in the plan area, within the range of biological diversity characteristic of native ecosystems within the larger landscape in which the plan area is embedded. In reaching plan decisions, the Responsible Official should consider current and recent disturbance regimes as well as the ecological condition, structure, and land use history of the planning or assessment area, and effects of these factors on options and opportunities to manage NFS lands to achieve biological diversity objectives.
No specific section on this topic.	No specific section on this topic.	**(2)(ii) Contributions of NFS lands.** When reaching plan decisions, the Responsible Official must identify and evaluate the special role of and unique contributions of NFS lands in maintaining and restoring biological diversity within the larger landscape in which the plan area is embedded.
Provides for a two part plan decision - one for ecosystem diversity and one for species viability.	Same as 2000 Rule.	Provides for one integrated decision on biological diversity.
(1) Ecosystem Diversity. Plan decisions affecting ecosystem diversity must provide for maintenance or restoration of the characteristics of ecosystem	**(2)(i) Ecosystem diversity.** Plan decisions should provide for measurable progress toward the maintenance or restoration of ecological conditions that will	See above – §219.13(b)(2); ecosystem diversity is an integral component of biological diversity. Use of the range of variability is not specified, but may be used if appropriate.

2000 Rule	2002 Proposed Rule- 219.13(b) Option 1	2002 Proposed Rule- 219.13(b) Option 2
composition and structure within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period in accordance with (i) through (v).	support the diversity of plant and animal communities and tree species and other characteristics of ecosystem diversity. A variety of approaches may be used, such as conservation strategies designed for one or a group of species-at-risk, or management practices that emulate effects of natural disturbance regimes or result in characteristics of ecosystem diversity within the range of variability expected to occur under the current disturbance regimes.	
Provisions (i), (ii), (iii), (iv), (v)	Forest Service Directives as appropriate	Forest Service Directives as appropriate
(2) Species diversity. (i) Plan decisions affecting species diversity must provide for ecological conditions that the Responsible Official determines provide a high likelihood that those conditions are capable of supporting over time the viability of native and desired non-native species well distributed throughout their ranges within the plan area, except as provided in (ii) - (iv).	**(2)(ii) Species diversity.** Plan decisions should provide for ecological conditions that the Responsible Official determines provide a high likelihood of supporting over time the viability of native and desired non-native vertebrates and vascular plants well distributed within their ranges in the plan area. When assessing "high-likelihood" and "well distributed," consider factors under agency authority and relative to species life history and distribution within the plan area. Where conditions capable of supporting viability for particular species or species groups are not likely to be met through provisions for ecosystem diversity, specific plan objectives or standards should be developed for those species or species groupings.	See above – §219.13(b)(2); species diversity is an integral component of biological diversity.
Exceptions (ii), (iii), (iv)	Forest Service Directives as appropriate	Forest Service Directives as appropriate
219.20(b)(3) Federally listed threatened and endangered species. **(i)** Plan decisions must provide for implementing actions in conservation agreements with the Fish and Wildlife Service or the National Marine Fisheries Service that provide a basis for not needing to list a species.	See above – 219.13(b)(2)(ii); recovery of federally listed species is an integral component of species diversity. Endangered Species Act requirements are not restated in the proposed rule.	See above – 219.13(b)(2)(i); recovery of federally listed species is an integral component of biological diversity. Endangered Species Act requirements are not restated in the proposed rule.
(ii) Plan decisions must include, at the scale determined by the Responsible Official to be appropriate to the plan decision, reasonable and prudent measures and associated terms and conditions contained in final biological opinions. Plan decision documents must provide a rationale for adoption or		

2000 Rule	2002 Proposed Rule- 219.13(b) Option 1	2002 Proposed Rule- 219.13(b) Option 2
rejection of discretionary conservation recommendations contained in final biological opinions.		